

# XENIX<sup>®</sup> System V

Operating System

Installation Guide

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# Chapter 1

## Introduction

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## 1.1 Overview

This is a guide to installing XENIX on your personal computer. Setting up user accounts and peripheral devices is also discussed.

Topics covered in this guide include:

- How the system is distributed in three packages and what each contains.
- Responding to system prompts in the installation procedure.
- What you need to get started.
- Starting the system for the first time.
- Preparing the hard disk for XENIX.
- Starting the system from the hard disk.
- Setting up user accounts.
- Using a second operating system (DOS) with XENIX.

## 1.2 Using This Guide

This guide contains the following sections:

### Chapter 1: Introduction

This chapter gives an introduction and overview of topics covered in this guide.

### Chapter 2: Installation Procedure

A step by step guide to installing XENIX on your computer. Starting XENIX for the first time, initializing the hard disk, and setting up user accounts are among the topics discussed.

### Chapter 3: Using DOS and XENIX on the Same Disk

How to use both the XENIX and DOS systems. Includes a description of the **fdisk(C)** utility used to partition the hard disk for concurrent use of both systems.

# Chapter 2

## Installation Procedure

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### 2.1 Overview

This guide explains how to install the XENIX system on a personal computer. The XENIX Operating System is a powerful system of programs that gives your computer the same multi-user, multi-tasking capabilities as many large and expensive computers.

When you install the system, you:

- Initialize the hard disk, then;
- Copy the XENIX utilities from the XENIX distribution media to the initialized hard disk.

### 2.2 XENIX System Distribution

The complete XENIX System consists of the following three distribution sets:

- The Operating System
- The Development System
- The Text Processing System

The Operating System contains the XENIX programs you need to create multiple user accounts, manage file systems, create and manage files and perform system maintenance tasks.

The Development System contains the XENIX programs you need to create, compile, and debug assembly and high-level language programs.

The Text Processing System contains the XENIX programs you need to create, edit, and typeset documents.

### 2.3 How To Use This Guide

Read through this guide thoroughly before beginning the installation procedure so that you become familiar with the various steps and terminology used in each section. If you run into difficulties during the installation, call the Support Center listed on the support information card included with the software.

Always follow these rules:

1. During the installation you use the keyboard to enter information. Always:

- Begin each command after a prompt (often a \$, % or # symbol). During the installation process, the prompt can be "<Installation>," under certain conditions.
- Enter all requested names and numbers exactly as shown.
- Complete a line by pressing the RETURN key.

NOTE: The RETURN key is sometimes denoted on the keyboard by a "down-left" arrow, or referred to as the ENTER key.

2. If you make an entering error, you can erase the character:

- By using the backspace key,

OR

- By pressing Ctrl-h.
- To delete everything you have entered on a line, press Ctrl-u.

3. Some additional items to be aware of:

- (y/n)? is asking "yes or no?", and always requires a response from you (type "y" or "n" and press the RETURN key).
- The control symbol ( ^ ) refers to the Ctrl key, and is followed by another key which, used in combination with the Ctrl key, has a special meaning.

Example: ^h means backspace

Press the Ctrl key and the other key at the same time. This is the same action as using the Shift key.

- The RETURN key on your keyboard may have a large single arrow pointing left (or the word ENTER) on it rather than the word "return." In this guide, however, it is written this way:

RETURN



- Commands referred to in text are shown in **boldface** with the reference manual section next to the command in parentheses (for example **cat(C)**). Refer to the preface of the *XENIX User's Reference* for a guide to the various reference sections.

### 2.4 Before You Start

Before you begin the installation procedure, make sure your computer is fully assembled (and operational) and you are familiar with its operation. In particular you should know:

- How to turn the computer off and on.
- How to insert floppies into the floppy drive.
- How to reset the computer.
- The hard disk is locked or "parked" when the system is shutdown properly. Refer to **shutdown(C)** in the *XENIX User's Reference* to shutdown the system. When you see this message:

**\*\* Normal System Shutdown \*\***

**\*\* Safe to Power Off \*\***

**- or -**

**\*\* Press Any Key to Reboot \*\***

the hard disk is locked. Lock the hard disk if you move your computer.

If you have just assembled your computer for the first time or are unsure about the items listed above, briefly review the hardware manuals provided with your computer and hard disk. The hard disk must be connected to your computer according to manufacturer's specifications. Also, we suggest you run a system self-test as described in the computer's *Operator's Guide* in order to detect possible hardware problems.

Other items to be aware of:

- Make sure the FILESYSTEM (N2) floppy is not write protected. (High density 96tpi distributions have a single BOOT/FILESYSTEM floppy.)

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- Copy the BOOT and FILESYSTEM floppies (BOOT/FILESYSTEM) as soon as you can, then put the originals in a safe place and use the copies. Any floppy can fail with frequent use, so it is a good idea to back-up all your volumes, but especially these first, crucial floppies.

Use the MS<sup>TM</sup>-DOS floppy copy routine to make backups, before installing XENIX. If you cannot use the DOS routine, you can copy the floppies with the XENIX **diskcp**(C) command once you have installed the XENIX System. For more information on **diskcp**, see the *XENIX User's Reference*.

- If you are upgrading from XENIX 3.0 to XENIX System V, be sure to follow the upgrade procedure as outlined in the *XENIX Operating System Release Notes*.

### 2.5 Installation Procedure

#### 2.5.1 Overview

The installation procedure has six steps:

1. Start XENIX from the BOOT Floppy (volume N1).
2. Initialize the hard disk with the **hdinit**(C) program and, if desired, modify the hard disk partition table to share space with the DOS operating system.
3. Re-start the system from the newly initialized hard disk.
4. Copy the XENIX utilities.
5. Create the super-user password.
6. Create the first user account.

The following sections describe each step. After you complete the installation, be sure to store this guide and the distribution floppies in a safe place. You will need them again if you wish to reinstall the system for any reason.



### 2.5.2 What You Need

To install the XENIX System you need:

- A personal computer with at least 384K bytes of memory.
- One hard disk with at least 10 megabytes of storage.
- One double-sided floppy drive.
- The XENIX System distribution floppy disks.
- A Serial Number (an alphanumeric code printed on the Serialization Card).
- An activation key (an alphabetic code printed on the Serialization Card).

The XENIX System distribution set contains these floppies:

- The XENIX Operating System floppies. The *Release Notes* delivered with this guide contain a list of the number of floppies in each set and the software packages contained in the Operating System.
- Optional: Development System floppies. The *Release Notes* delivered with the *Programmer's Guide* contain a list of the software packages contained in the Development System.
- Optional: Text Processing System floppies. The *Release Notes* delivered with the *Text Processing Guide* contain a list of the software packages contained in the Text Processing System.

### 2.5.3 Starting XENIX From The Boot Floppy Set

You are ready to start the actual installation process. Find the distribution disks labeled "BOOT" (N1) and "FILESYSTEM" (N2).

---

#### Note

If your XENIX distribution is on high density, 96tpi floppies, there is only one BOOT/FILESYSTEM floppy.

---

Follow these steps:

1. Insert the BOOT floppy into the drive. If you have more than one floppy drive, use the primary drive. It is sometimes called the boot



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drive. Check your computer hardware manual if you are not sure which drive is the primary drive.

2. Turn on your computer and the hard disk.

The computer loads the XENIX **bootstrap** program from the floppy disk and begins to execute it. In the upper left corner of the screen, the computer may display the total amount of memory installed. Next, you see:

```
XENIX System V
```

```
Boot  
:
```

Press RETURN to boot from the floppy drive. You see the default floppy boot, which looks something like this:

```
fd(4,0)xenix
```

Then the system performs a self-check to determine if there are any problems with the hardware. The letters A-H appear in succession.

After XENIX is loaded in memory, the system displays information about how memory is allocated. You also see the number of multiscreens<sup>TM</sup> available on your system (see **multiscreen(M)** for more information on multiscreens). The number of multiscreens depends upon the amount of memory your computer has.

3. You see the prompt:

```
Insert filesystem floppy and press <RETURN>
```

Remove the BOOT floppy (N1) and insert the FILESYSTEM floppy (N2). If you have only one BOOT/FILESYSTEM floppy, leave it in the drive. Press:

```
RETURN
```

4. The remaining letters of the alphabet are displayed. After Z, the message appears:

```
No single-user login present  
Entering System Maintenance Mode
```

If the letters stop displaying before the letter "Z" is reached, run hardware diagnostics as explained in your computer manual, correct any identified problems and start the installation procedure



again from the beginning. If the letters stop again, call the Support Center listed on the support information card and be prepared to tell them at what letter the display ended.

The self-check using letters A-Z occurs every time you bring up your XENIX system. However, after this initial installation, the self-check does not display messages referring to the FILESYSTEM floppy (N2). Once the system begins to run, the following message is displayed:

### XENIX System V Hard Disk Initialization

When you see this message, you are ready to proceed with the second installation step, *Initializing The Hard Disk*.

#### 2.5.4 Initializing The Hard Disk

As part of the initialization process, you may partition the hard disk, using the **fdisk(C)** utility, to support both DOS and XENIX on the same hard disk, or you can allow XENIX to use the whole disk.

The following steps describe how to initialize the hard disk.

1. You see the message:

During installation you may choose to overwrite  
all or part of the present contents of your disk.  
Do you wish to continue? (y/n)

### *Note*

If you have any files on the hard disk that you wish to save before installing XENIX follow this procedure. Enter:

n

and press RETURN.

The following message appears:

Aborting initialization procedure

At this point, the system shuts down automatically, as the following message is displayed on the screen:

**\*\* Normal System Shutdown \*\***

**\*\* Safe to Power Off \*\***

- or -

**\*\* Press Any Key to Reboot \*\***

Remove the floppy, and reboot your existing operating system (DOS). After you have backed up the files you want to save, restart the XENIX installation procedure from the beginning.

Back up files that reside on partitions that you are going to overwrite. Creating a new partition on an unused portion of the hard disk will not overwrite files on another partition. It is not necessary to back up files that reside on an existing partition you are not changing.

---

2. If you do not have any files you want to save, enter

y

and press RETURN.

The **hdinit** program invokes **fdisk(C)**, which partitions the hard disk.



---

### Note

If you wish to partition the disk so that you can use another operating system in addition to XENIX, do not follow the **fdisk** steps shown here. Instead, see Chapter 3 of this *Installation Guide* and the **fdisk(C)** manual page in the *XENIX User's Reference*.

Install DOS on the hard disk before installing XENIX. Installing DOS after XENIX, in some circumstances, changes the **fdisk** table and makes the XENIX partition unbootable. If this happens, you must recreate the **fdisk** table. Note that DOS **fdisk** reports disk size in cylinders, XENIX **fdisk** reports disk size in tracks.

After you set up the desired partitions with **fdisk**, return to the next part of this installation procedure.

If you are only using XENIX on your hard disk, continue with the following steps.

---

3. After a moment, an **fdisk** menu appears on the screen. You see this option list:

Select one of the following options or 'q' to exit the program

1. Display Partition Table
2. Use Entire Disk for XENIX
3. Create XENIX Partition
4. Activate XENIX Partition
5. Delete XENIX Partition

Please enter your choice:

Enter option "2" and press RETURN.

If you have never installed an operating system on your disk, you see a table similar to this:

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Current Hard Disk Drive: /dev/rhd00

Partition	Status	Type	Start	End	Size
1	Active	XENIX	1	1219	1219

Total disk size: 1220 tracks

Press <RETURN> to continue

---

### Note

If you have previously installed an operating system on your disk, you see a table that might look something like this:

Current Hard Disk Drive: /dev/rhd00

Partition	Status	Type	Start	End	Size
1	Active	UNKNOWN	1	1219	1219

Total disk size: 1220 tracks

Warning! All data on your disk will be lost!  
Do you wish to continue? (y/n)

If you would like XENIX to occupy the whole disk, enter 'y' and press RETURN.

Even if you have already installed XENIX, and are just reinstalling the system, you should enter 'y' and press RETURN at this point if you want XENIX to occupy the whole disk. This insures that **fdisk** partitions the whole disk for XENIX.

Note that the track numbers and size of your disk may vary from this example.

---



Press RETURN, and you see the main **fdisk** menu. You have now set up the partition(s) to use XENIX on your hard disk. To continue with the next step in the installation procedure, enter:

q

and press RETURN.

4. Now you see a menu from the program **badtrk(C)**. With the **badtrk** program, you can scan your hard disk for defective tracks. The program maps any flaw locations to other, good tracks. It also creates a flaw map, which is a list of all the bad tracks on your hard disk.

The main program menu looks like this:

Select one of the following options or 'q' to exit program:

1. Print Current Bad Track Table
2. Scan Media Surface for Possible Bad Spots
3. Create New Bad Track Table
4. Add Entries to Current Bad Track Table by Head/Cylinder #
5. Add Entries to Current Bad Track Table by Sector Number
6. Delete Entries from Current Bad Track Table

Please enter your choice:

If you have never scanned your disk for bad tracks, enter:

2

and press RETURN. The **badtrk** program scans the hard disk for possible flaws. The scanning process takes roughly one to two minutes per megabyte of storage on the disk.

As the program scans the disk, it displays the number of each track it examines. Whenever it finds a defective track, it lists the location of that track using both the sector number and cylinder/head conventions. Defective track information is entered into the table and displayed on the screen. An example bad track might be:

```
error on dev Fixed Disk (0/47), block=12954 cmd=0003 status=0018
sector = 12971, cylinder/head = 190/3
```



When the scan is complete, the menu reappears. Enter option "1" to see the results of the scan. Your bad track table might look like this:

#### Defective Tracks

	Cylinder	Head	Sector Number(s)
1.	190	3	12971-12987

Press <RETURN> to continue

---

#### Note

If there is a flaw in the first few tracks of the XENIX partition, you are returned to the **fdisk** utility (see the previous installation step). Repartition the disk with **fdisk** so that the XENIX partition no longer includes the defective tracks. You will have to experiment to determine how many tracks to exclude. Leave these defective tracks unassigned to any operating system. When you leave **fdisk**, **badtrk** runs again. Scan the disk for flaws.

This process continues until **badtrk** finds no flaws in the first few tracks.

---

Press RETURN to return to the main menu. If your disk comes with a flaw map, you should enter any flaws from it into the **badtrk** table. This procedure is described below.

Some disks are not furnished with a flaw maps. If this is the case with your disk, enter:

q

to leave **badtrk**. If you have no bad tracks, or made no changes to the bad track table, skip to the next step (5) on **divvy(C)**.

If you created a new bad track table, or altered an existing one, the program prompts:

Do you want to update this device with the new table? (y/n)

Enter:

y

If there are defective tracks, you are prompted:

Do you want to attempt to salvage any valid data  
on the bad tracks? [may take a long time] (y/n)

Enter 'y' or 'n'. Either way, the process of mapping bad tracks takes several minutes. When **badtrk** finishes, continue the installation procedure.

If your disk is not furnished with a flaw map, skip to step "5" and proceed with the **divvy(C)** utility.

If your disk does come with a flaw map, proceed with the next steps to enter any defective tracks which are not already indicated in the **badtrk** flaw table.

Because most disk flaws are marginal or intermittent, your disk's flaw map will probably list more bad tracks than the scanning process reveals. If so, you should now add these defective tracks to the **badtrk** flaw table.

Select either option "4" or option "5" depending upon the format of the flaw map furnished with your disk. Enter the defective tracks, one per line. If you make a mistake, enter:

q

and press RETURN. When you see the main **badtrk** menu, enter option "6" to delete a track.

When you are finished making changes to the flaw table, enter:

q

and press RETURN to return to the main menu. At the main **badtrk** menu, enter:

q

again and press RETURN. **badtrk** prompts:

Do you want to update this device with the new table?



Enter:

y

and press RETURN to save the changes. You are prompted:

Do you want to attempt to salvage any valid data  
on the bad tracks? [may take a long time] (y/n)

Answer 'y' or 'n'.

5. You now see several prompts from the **divvy(C)** utility. This program allocates portions of your partitioned disk for the *root* and *swap* areas.

It also allocates a small portion of the disk for a *recover* area that is used during autoboot. The **fsck(C)** program uses this *recover* area to place output when the *root* device is cleaned.

If you create a very large root filesystem you are asked if you want to create an additional, small portion of the disk as scratch space for **fsck**. **fsck** uses the scratch space for temporary storage when cleaning very large filesystems. You should make a scratch filesystem if you have a very large *root* filesystem, since this makes booting XENIX much easier.

After that, **divvy** prompts:

There are 10098 blocks in the XENIX area.  
Between 1000 and 2000 blocks should be used for the swap area.

Please enter the swap-area allocation, or press <RETURN>  
to get the default allocation of 1250 blocks:

The actual numbers in this prompt vary depending upon the size of your disk. If you do not plan to install the Development System, enter:

RETURN

for the default values. If you plan to install the Development System, enter a swap-area allocation that is approximately 500 blocks larger than the default.

Next, you see:

Do you require block-by-block control over  
the layout of the XENIX partition? (y/n)



If you are installing XENIX for the first time, enter:

n

and press RETURN. Block-by-block control means you can choose the exact size of filesystems and the swap area to fit your needs. Most user's do not need this kind of precise control, so answering 'n' at this prompt causes **divvy** to use default settings based on the size of your hard disk.

If you answer 'y' you see a table from the **divvy** program. Refer to **divvy(C)** in the *User's Reference* for more information.

If your disk is larger than 20M bytes, you see the prompt:

Do you want a separate /u filesystem? (y/n)

We recommend that you have a separate filesystem with disks larger than 20M bytes, especially if you anticipate having many, active users. You should leave at least 15M bytes for the *root* filesystem.

You can call this separate filesystem anything you want, and, if desired, you can change the name later. The name should be different from any other directory or filesystem. We recommend that you use the name */u*. For more information on using a */u* filesystem, see Chapter 7 of the *XENIX Operations Guide*, "Using Peripheral Devices." That chapter describes adding a second hard disk (and filesystem), but the discussion of a second filesystem applies here.

If you have enough storage for a separate user filesystem, and want to create one, enter:

y

and press RETURN.

---

### Note

If you create a */u* filesystem enter this command after you finish installing the XENIX system and **are in System Maintenance Mode**:

mkdev fs /dev/u /u

---

6. The system now loads a rudimentary XENIX file system onto your hard disk. This takes several minutes. You see the message:

### Making filesystems

When the **hdinit** program is finished, the system shuts down and displays instructions on booting the newly initialized hard disk. You see:

**\*\* Normal System Shutdown \*\***

Remove the FILESYSTEM floppy, and insert the BOOT floppy (N1) into the drive. If you have a single BOOT/FILESYSTEM floppy, leave it in the drive. Press any key to reboot the system.

If you want to add a second hard disk, finish the installation procedure. Then refer to Chapter 7 of the *XENIX Operations Guide*, "Using Peripheral Devices."

### 2.5.5 Starting XENIX On the Hard Disk

This section explains how to start the XENIX system using the hard disk.

1. After you see the boot prompt

Boot  
:

enter:

**xenix rootdev=hd(40,0)**

and press RETURN. You see some copyright information, and information about the memory configuration of your system.

As before, the system performs a self-check to determine where any problems exist with the hardware. The letters A-Z appear successively on screen. If the letters displaying stop before the letter "Z" is reached, run hardware diagnostics as explained in your computer manual. Correct any identified problems and start the XENIX installation procedure again.

If the letters stop at this point, call the Support Center listed on the support information card and be prepared to tell them the last letter displayed.

2. Now the program **fsck(C)** is run. **fsck** checks the filesystem(s) on your hard disk.



If you have a very large *root* filesystem, you are prompted for a scratch filesystem name at this first boot up. If you created a scratch filesystem with **divvy**, enter:

`/dev/scratch`

This is the only time you have to enter a scratch filesystem name if you have a large filesystem and specified a scratch filesystem with **divvy**.

If you have a large filesystem, but do not specify a scratch filesystem with **divvy**, you must enter the name of a scratch filesystem every time you boot your system. An example scratch filesystem in this case is blank, formatted floppy:

`/dev/fd0`

3. When **fsck** finishes, you are prompted to make sure the BOOT (N1) floppy is in the drive. You see the following:

Verify Operating System volume N1 is inserted  
and press <RETURN>

4. After this, follow any additional screen prompts for floppies. Note that you may not be prompted to insert all the volumes in your distribution at this time.

For example, the Link Kit is on one of your volumes and it is not installed at this time. You can install the Link Kit later in this procedure.

If you insert a floppy in the wrong order, you see this prompt:

Error: incorrect volume in drive!

Remove the floppy from the drive, insert the correct volume, and press RETURN.

If there is an error with the extraction procedure, such as a floppy error, the door of the floppy drive is not completely closed, or there is some other problem you may see the message:

Extraction error: try again? (y/n)

Enter:

y

and press RETURN.



5. When the last of the "N" volumes you are prompted for is read, you see the message:

### Operating System Serialization

Enter your serial number  
and press <RETURN>

Enter the serial number exactly as it is shown on your Serialization Card and press RETURN. Then you see the message:

Enter your activation key  
and press <RETURN>

Enter the activation key exactly as it is shown on your Serialization Card and press RETURN.

6. Next you are prompted to enter the "B" series of floppies. You see screen prompts like those for the "N" floppies.

When the last of the "B" floppies are installed, you see:

Does daylight savings time apply at your location? (y/n)

If daylight savings applies, enter 'y.' If not, enter 'n.' After you press RETURN, you see:

Are you in North America? (y/n)

If you enter 'y,' you see:

1. AST – Atlantic Standard Time
2. EST – Eastern Standard Time
3. CST – Central Standard Time
4. MST – Mountain Standard Time
5. PST – Pacific Standard Time
6. YST – Yukon Standard Time
7. HST – Hawaiian/Alaskan Standard Time
8. NST – Nome Standard Time

Enter the number that represents your timezone:

If, for example, your timezone is Nome Standard time, you would enter the number '8' and press RETURN.

If you are not in the United States (or one of the time zones represented above), and entered "n", the following is displayed:

What is the standard abbreviation of your timezone? (3 capital letters)



Type three upper case letters which represent your time zone and press RETURN. Next you will see this message:

How many hours west of Greenwich Mean Time are you?

Answer with a number between -23 and 23, then press RETURN. Do not use fractions.

The time zone variable, TZ, in the file */etc/default/login* is changed accordingly. Your time zone is now set. There is no need to change the *.profile* for a user, unless they call in from a different time zone, and want to override the local standard.

You have now installed the minimal XENIX system, or run time system. You can use many of the standard XENIX utilities, or install other applications packages.

You see another menu which gives you the option of stopping or continuing with the installation. You can, at this point, stop the installation, or you can continue to install the XENIX Operating System in the next section, *Installing the XENIX Distribution*.

### 2.5.6 Installing the XENIX Distribution

You can now install more of the XENIX Operating System. With the **custom(C)** program you can selectively extract files from the distribution set to create your own custom XENIX system. You see information about your filesystem(s), including the number of blocks currently used. You also see this menu:

1. Continue installation
2. Stop installation

If you want to install all or part of the Operating System, enter option '1' and press RETURN.

Note that the entire XENIX distribution, including the Development System and Text Processing System requires more than 10M bytes of disk space.

If you choose option '1,' you are prompted for a set to install (customize). Choose from Operating System, Development System, and Text Processing System.

The **custom** program prompts for the necessary volume numbers. Insert the appropriate floppies and follow the screen prompts. For information on installing portions of the Operating System, see the *XENIX Reference* section on **custom(C)**.



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You can install the Link Kit at this time with **custom**. Note that you are prompted for your serial number and activation key again. Enter them as you did earlier in the installation.

When you are finished installing XENIX, you see a message about booting the system. You then see:

**\*\* Normal System Shutdown \*\***

**\*\* Safe to Power Off \*\***

**- or -**

**\*\* Press Any Key to Reboot \*\***

The system shuts down. Remove any floppy that is in the drive.

Press any key to reboot the system and when you see the boot prompt:

Boot  
:

press:

RETURN

You see:

hd(40,0)xenix

The screen clears and you see some self check diagnostics. You then see:

Type CONTROL-d to proceed with normal startup  
(or give root password for system maintenance)

Press RETURN at this point since there is no root password. The next step is to create a password for the root account.

### 2.6 Creating the Super-User Password

The super-user password keeps the system safe from unauthorized use. It is important that you create a super-user password immediately after the system has been installed to ensure maximum protection of the system and prevent unnecessary use of the super-user (also known as "root") account.

It is very easy to make errors when logged in as super-user that could destroy files. **Login as super-user only to install programs and to do system maintenance tasks.** For a complete description of the super-user, see the *XENIX Operations Guide*.

To create the super-user password, follow these steps:

1. Enter:

`passwd root`

and press RETURN.

The system displays the message:

New password:

The new password can be any sequence of letters, numbers, and/or punctuation marks, but should be at least 5 characters long.

2. Enter the new password and press RETURN.

The system does not display the password as you enter so enter carefully. After you press RETURN the system displays the message:

Retype new password:

3. Enter the new password once more and press RETURN. Make sure you enter it correctly, otherwise the program will ignore the change.

The super-user password is now in place. From now on, the password is required whenever you attempt to access the system as super-user.

Do not forget the super-user password. To restore a forgotten super-user password you must reinstall the XENIX system. If necessary, keep a copy of the super-user password in a safe place.

### 2.6.1 Sysinfo Account

There is a special account used to perform system backups. The "sysinfo" account is set up with permissions and privileges similar to the super-user account, but only for performing system backups. See the chapter "Backing Up File Systems" in the *XENIX Operations Guide* for more on this procedure.

We suggest you create a password for the "sysinfo" account when you create the password for the super-user account "root".



### 2.7 Creating the First User Account

The last step in the installation is to create the system's first user account, "guest". This guest account is a temporary workspace on the system that you may use to practice with the XENIX system. Later, after installation is complete and you are familiar with the XENIX commands, you can remove the guest account and create private accounts for all the system users.

To create the first user account, follow these steps:

1. Enter:

mkuser

and press RETURN. The system displays the message:

Newuser  
Add a new user to the system

Do you require detailed instructions? (y/n):

Enter:

n

and press RETURN (you can examine the instructions at some other time). You can quit from the program at any "(y/n)" prompt by entering the letter 'q' and pressing RETURN.

2. The system prompts for more information:

Enter new user's login name:

Enter:

guest

and press RETURN. The name "guest" is now the login name for the new user account.

3. Next, the program prompts for a group name:

Do you want to use the default group? (y/n)?

Enter:

y

This sets the group to "group".

4. Next, the program prompts for the new user's password.

Enter password

Press RETURN. This allows you to use the guest account without giving a password.

5. Next, the program prompts for the shell type. The following displays:

Please specify the type of shell (command interpreter) the user requires. You can type 1, 2, 3, 4, or 5 as follows:

- 1 Standard (Bourne) Shell.
- 2 Visual Shell.
- 3 C Shell.
- 4 Restricted Shell.
- 5 Uucp.

Enter "1" and press ENTER. The guest account has an **sh(C)** shell.

6. Finally, the program prompts you for comments.

Please Enter Comment > .....  
>

Enter:

guest account

and press RETURN.

7. The system then prompts if you want to change anything. Enter:

n

and press RETURN.

8. Finally, you see the prompt:

Add another user? (y/n)

Enter:

n

and press RETURN.



The new guest account is ready. Later, when you turn to the *XENIX User's Guide*, you may use this account to, for instance, practice logging in, make directories and run programs.

### 2.8 The Next Step

If you created a */u* filesystem earlier in the installation, you should now run this command:

```
mkdev fs /dev/u /u
```

Of course, if you chose a name other than *u* for the second filesystem, use that name in the command line above.

If you are familiar with the XENIX Operating System, you may continue with normal startup and begin working. Just press down the CONTROL key and enter "d". Refer to the explanation of normal startup in the *XENIX Operations Guide* if you have problems.

If you are not familiar with the XENIX Operating System, we recommend that you halt the system and turn to the *XENIX User's Guide* and the *XENIX Operations Guide* to learn how to start the system, how to log in, and how to run programs.

To halt the system, follow these steps:

1. Enter:

```
/etc/shutdown 0
```

and press RETURN.

2. Wait for the following message:

```
** Normal System Shutdown **
```

```
** Safe to Power Off **
```

```
- or -
```

```
** Press Any Key to Reboot **
```

3. When you see the shutdown message, it is safe to turn off the power to the computer.



### 2.9 Troubleshooting

Sometimes things can go wrong in the installation procedure. Most often, there is no problem with the software or the procedure itself. Occasionally there is a problem with the hardware, but most are minor, such as improperly connected cables.

You can avoid most simple errors by reading the *Release Notes* delivered with this product, and this *Installation Guide* completely before you try to install the software.

During the installation procedure, don't assume you know what is about to happen, even if you have installed the XENIX system before. Use the documentation wisely.

If you have difficulty installing the software, here is a list of some of the most common problems, how to avoid them, and how to fix them if they happen:

- *Some hardware (for example, a disk drive) doesn't seem to work, although it works fine under another operating system.*

Certain hardware configurations do not work with XENIX. Refer to the "Compatible Hardware" section in the *Release Notes* for information on what hardware you can use with XENIX.

- *XENIX is installed after DOS, now both operating systems do not work*

Do not install XENIX after installing DOS on that same hard disk. This is because of the way the two operating systems keep track of space on a disk. XENIX uses tracks, whereas DOS uses cylinders, and, if you install XENIX first, DOS may not find the correct end of its allotted partition.

If you already have DOS installed on your hard disk, and wish to install XENIX, you must first copy the DOS information to your backup media. Then install the XENIX Operating System. Finally, replace DOS.

See the chapter in this *Installation Guide* "Using DOS And XENIX On The Same Disk."

- *Error reading a floppy.*

Make sure you insert the correct floppy at the correct time. Insert the floppy correctly (see your owner's manual if you do not know how to insert the floppy correctly).



Make sure the floppy drive door is closed after you insert a floppy.

If you are sure the proper floppy is inserted correctly, and you still have a read error, try tapping the floppy lightly against a hard surface, such as a table top. Be careful not to damage the media, though!

- *The system does not boot from the BOOT floppy.*

Make sure you insert the BOOT floppy. If you insert another floppy instead, you do not see an error message, but the system still does not boot.

The BOOT floppy is shipped with a write protect tab so that you do not accidentally erase it during the installation process. If you erase or damage the BOOT floppy, and you have not made a backup copy, call the SoftCare Support Center number to arrange for a new BOOT floppy.

- *The system won't boot from the hard disk*

You may see a message such as:

panic: iinit

or another kind of error message. Sometimes this happens because you did not run a bad track scan during installation, and the boot block was written on a bad track.

Whatever the reason, you must reinstall the XENIX system. If you didn't enter all the flaws furnished on a flaw map, do so this time.

If XENIX still won't boot, run your system's and disk's hardware diagnostics.

- *You forget to enter more bad tracks from a manufacturer furnished flaw map.*

You can add more flaw locations to the bad track map any time you are in System Maintenance mode. Follow these steps if you are still in the installation procedure:

- Finish installing the run time system.
- When you are prompted to continue installing, or stop the installation process, stop the installation process.
- Enter system maintenance mode.

- Run **badtrk** to add the new flaws.
- Salvage any data (when prompted under **badtrk**).
- Run the **custom** utility to finish installing your system.



# **Chapter 3**

## **Using DOS and XENIX On the Same Disk**

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- 3.2 Partitioning the Hard Disk Using **fdisk** 3-1
- 3.3 Installing XENIX on a DOS System 3-2
- 3.4 Using XENIX and DOS With Two Hard Disks 3-3
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### 3.1 Introduction

Many users received the MS-DOS, or other closely compatible DOS, operating system with their computer. This chapter explains how you can still use DOS utilities, files, and applications after you install the XENIX operating system. You can even access DOS files and directories from XENIX. You do not need to throw away your investment in DOS software, or buy another computer just to run XENIX.

Several programs make this possible. The **dos(C)** utilities allow access to DOS files on diskettes or on the DOS partition on the hard disk. These utilities are discussed later in this chapter. The utility which partitions the disk is called **fdisk(C)** and is available in DOS and XENIX versions. The next section explains how to use **fdisk** to run DOS and XENIX on the same hard disk. Another section discusses installing XENIX on the hard disk along with DOS. There is also a section explaining various booting configurations, for users who mostly use XENIX and for users who mostly use DOS.

### 3.2 Partitioning the Hard Disk Using **fdisk**

Each version of **fdisk** is documented in the respective operating system's manual. **fdisk(C)** is found in the *XENIX Reference*.

**fdisk** is interactive and a menu displays your options. When you exit **fdisk**, the utility asks you whether or not you actually desire to make the specified changes. This feature lessens the chance of making a mistake. Here is an example of an **fdisk** menu:

1. Create Partition
2. Change Active Partition
3. Delete Partition
4. Display Partition Table
5. Create XENIX Partition for Whole Disk

Enter Choice:

The **fdisk** utility allows you to set up separate areas (partitions) on your hard disk for both operating systems. The hard disk is divided into tracks. The number of tracks depends upon the size of the hard disk. A partition consists of a group of tracks. One hard disk may contain up to four partitions. Each partition can have a different operating system and associated directories and files. Not all operating systems can be used with **fdisk**.

The **fdisk** command allows you to specify which partition is "active". This means that when you turn on (boot) your computer, the operating system installed in the active partition will start running. The XENIX partition



must be active when you intend to use the XENIX operating system.

The **fdisk** command allows you to specify the number of tracks used by the partition. This will vary according to the size of your hard disk. We recommend using at least a 10 megabyte hard disk to run XENIX. The size of the XENIX partition also depends on the number of software packages you want to install. Refer to the **custom(C)** manual page for information on the installing and removing packages from the three XENIX distribution Systems. 6 megabytes is a good starting point. You can install the XENIX Operating System package in this space, and have space for user files.

The **fdisk** command allows you to specify where the partition begins. **fdisk** will not allow you to construct overlapping partitions, or a partition that begins with a bad track. You do not need to install XENIX in the first partition. When you are running XENIX, the device name of the partition running XENIX is */dev/hd0a*.

One option of **fdisk** tabulates the current state of the partitions (the Display Partition Table option). This option lists, for each partition, whether the partition is active, the first track, the last track, the number of track used, and the associated operating system. If you enter the Display Partition Table option and press RETURN to see the partition table, the result may look like this:

<u>PARTITION</u>	<u>STATUS</u>	<u>TYPE</u>	<u>START</u>	<u>END</u>	<u>SIZE</u>
1	A	XENIX	001	800	800
2	N	DOS	801	1219	420

There are two ways to switch operating systems once you have set up separate XENIX and DOS partitions. You can use a floppy diskette with the files necessary to boot the DOS operating system. Because the XENIX partition must be active for XENIX to operate, you cannot use a bootable floppy to boot XENIX. You can use **fdisk** to change the current active partition. This method is appropriate for an occasional change of the active operating system. Turn the computer off. When you re-boot, the operating system associated with the active partition starts running. It is recommended you use a boot floppy to boot the DOS operating system. Booting from a floppy is generally easier, faster and safer than constantly using **fdisk** to change active partitions.

### 3.3 Installing XENIX on a DOS System

If you wish to set up XENIX on a hard disk which previously contained only DOS, first back up all the DOS files and directories. Run **fdisk**, under DOS, and assign a partition to DOS, leaving enough disk space so that XENIX has at least 6 megabytes. Delete DOS from the partition you will assign to XENIX. It will display as *Other* when you display the Partition Table. Make



a note of the tracks assigned to each operating system. Designate *Other* as the active operating system.

Follow the installation procedure outlined in Chapter 2 of this guide to install XENIX. During the installation procedure **fdisk** is invoked to partition the hard disk. Use **fdisk**, to duplicate the assignments made under DOS and assign a partition which is at least 6 megabytes to XENIX. You will see a message warning that the contents of the hard disk will be destroyed. Don't worry, you backed up the DOS files in this area, and will restore them later. This partition will contain XENIX. Designate "XENIX" as the active operating system.

---

### Note

Under XENIX, **fdisk** DOS partitions display as *DOS* while under DOS, **fdisk** displays XENIX partitions as *Other*.

You can only create DOS partitions using DOS **fdisk**, and only XENIX partitions using XENIX **fdisk**.

Be aware that DOS **fdisk** usually reports the size of the hard disk in terms of cylinders.

---

Reboot the system using a DOS boot floppy in the floppy drive or use **fdisk** to designate *DOS* as the active operating system, and reboot. You can reinstall your DOS files and directories in the separate partition anytime after you have set up the DOS partition, and finish the XENIX installation. You are then accessing the DOS partition and can reinstall DOS.

If you have an active XENIX partition and boot DOS from a floppy you can transfer to C: to work with the DOS files.

### 3.4 Using XENIX and DOS With Two Hard Disks

Your computer always boots the operating system in the active partition on the first hard disk. XENIX must boot from the first hard disk. There are several ways to configure your system if you have two hard disks. Two ways are discussed here.

One configuration consists of designating the entire first disk as a XENIX partition. You then use a DOS boot floppy to start DOS and specify:

A> A: D:



to switch to the DOS area on the second hard disk, where **D** is the designation for the second hard disk.

Another method is to maintain a small DOS partition on the first hard disk. The DOS partition is designated the active partition. In this configuration, the computer always boots DOS. This requires changing the active partition to boot the XENIX operating system.

---

### Note

Be sure to make a backup copy of your boot floppies if you use them to boot your secondary operating system.

---

### 3.5 Removing An Operating System From the Hard Disk

You may find that you no longer need one of the operating systems installed on your hard disk. If you want to delete an operating system, use **fdisk** under both operating systems to delete the partition in question. Deleting the partition removes the contents of that partition and leaves unallocated space.

You can then reallocate that space by either adding another XENIX or DOS partition, or enlarging an existing partition. Enlarging a partition requires reinstalling the operating system and (for a XENIX partition) remaking the filesystem on the partition using **mkfs(C)**. Refer to Chapter 7, "Using Peripheral Devices," of the *XENIX Operations Guide* if you add a second XENIX partition and want to designate this partition as a mounted filesystem.

### 3.6 DOS Accessing Utilities

There is a set of other utility programs which help you bridge the two operating systems. These are the XENIX commands, such as **dosls** and **doscat**, described in the XENIX manual page **dos(C)**. These programs allow you to access DOS files and directories which reside in a non-active DOS partition while running XENIX. You can list, copy, move and view the contents of files, and create directories. You may also be able to use the XENIX **dd(C)** and **diskcp(C)** commands to copy and compare DOS floppies. The XENIX **dtype(C)** command tells you what type of floppies you have (various DOS and XENIX types).

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*Note*

You can not execute (run) DOS programs or applications under XENIX.

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The XENIX Development System, with the cmerge compiler, has the capability of using the XENIX System to create and compile programs which can be run under DOS operating systems. Refer to the *XENIX C User's Guide* appendix entitled "XENIX to MS-DOS: A Cross Development System" and the *C Library Guide* Appendix entitled "A Common Library for XENIX and MS-DOS" for more on using XENIX to create DOS programs.